

The Bachelor Chest

A Project of Enduring Beauty and Utility

by Joseph Olivari

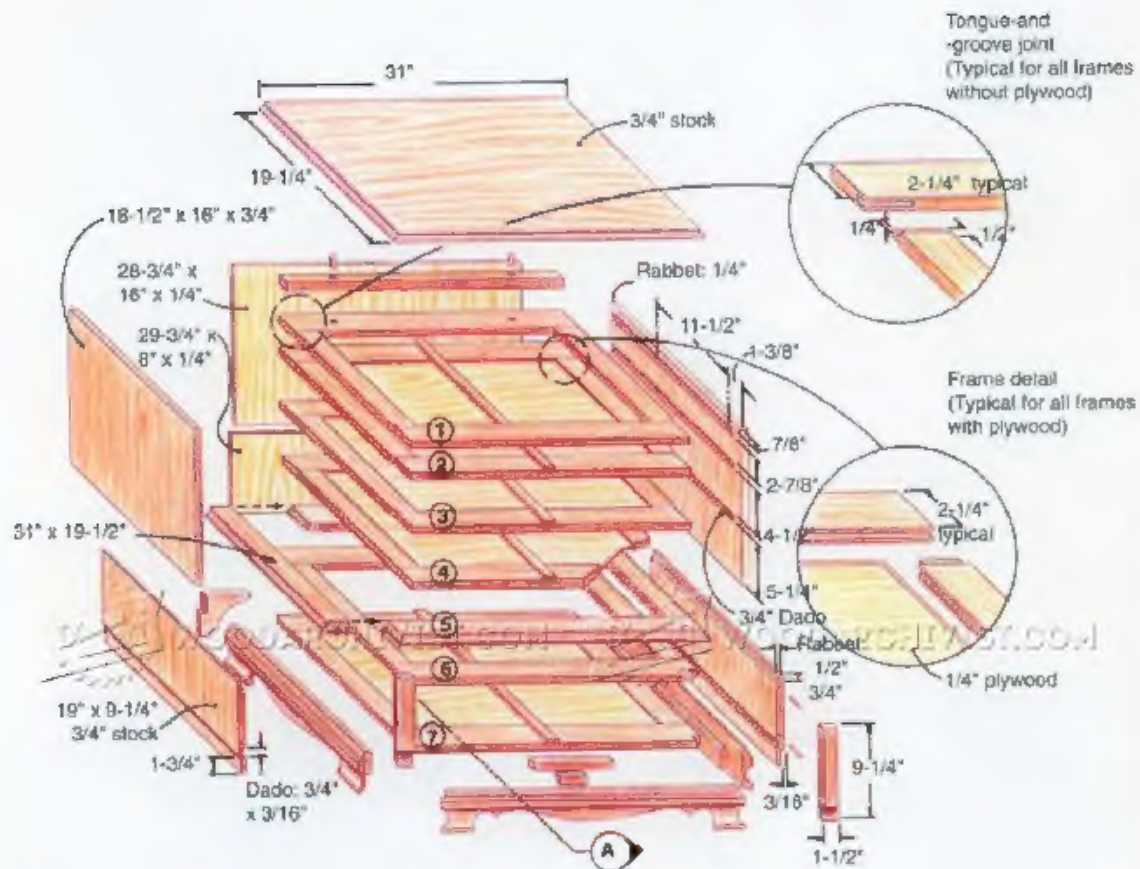


I used cherry to build this chest as I enjoy working with it, but other varieties of wood could be used if you prefer. There are many small details on this project, but overall it is not very difficult to make. Most of the joinery consists of dados and basic mortise-and-tenon joints, which can all be made on a tablesaw. A handsaw or scrollsaw is helpful for cutting out the curves on the base, but you could

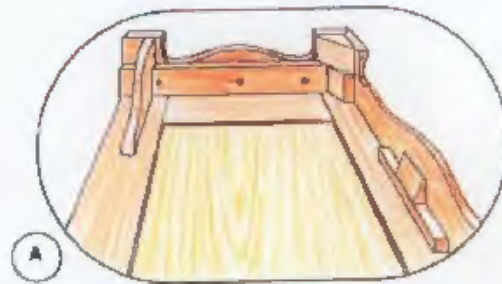
also cut these out with a hand-held coping saw. Additionally, you will need a router for some of the moulding details, as well as for joining the drawers.

Carcass construction — Start by making the sides for the carcass. There are two pairs of sides, one for the top section of the chest and one for the bottom section. Edge-glue

Figure 1.
EXPLODED VIEW OF CARCASE, FRAMES, AND BASE



- ① ② ③ ④ Frame: 28" x 18-1/4"
(2-1/4" x 3/4" stock)
- ⑤ Frame: 31" x 19-1/2"
(2-1/4" x 3/4" stock, except
front piece 2-3/4" x 3/4" stock)
- ⑥ Frame: 29-3/4" x 16-3/4"
(2-1/4" x 3/4" stock, except
back piece: 3-1/4" x 3/4" stock)
- ⑦ Frame: 29-1/2" x 16-3/4"
(2-1/4" x 3/4" stock, except back piece
3-1/4" x 3/4" stock)



random widths together to obtain the necessary dimensions, then sand them and cut them to size.

Next, set up the tablesaw with a dado-set to cut the dados and rabbets in the sides to house the horizontal frames and the plywood backs. All the dados are $3/16$ in. deep, but for greater strength, the rabbets at the top of the bottom sides are $1/2$ in. deep, and the rabbets for the plywood should match the thickness of the plywood. The dados in the top pair of sides are stopped about 1in. from the front edge—the frames which fit in these dados being notched to match at their front edge. This way the dados are not visible from the front of the chest. On the bottom, however, the dados and rabbets run through from front to back since their front ends will be covered by the pilasters and will not be seen.

Note that the bottom frame of the top cabinet simply butts against the sides, and is not housed in either a dado or rabbet. This is because it rests on top of the moulded divider-frame and doesn't need the extra support of a rabbet.

After the sides have been prepared, make the pilasters and attach them to the fronts of the bottom sides with $3/8$ in. dowels. Make the outside edges of the pilasters flush with the out-

side faces of the sides, and put a $3/8$ in. chamfer on their outside corners. Once these are complete, cut $3/16$ in. x $1-3/4$ in. rabbets (for the base) on the bottom outside edges of the sides. These rabbets must also run around the front of the pilasters. Note that the top of these rabbets must be even with the bottom of the dado (cut on the inside of the sides) for the bottom-drawer frame. This frame extends to the front of the pilaster (it is notched around it) to rest on top of the base.

Frame construction — Now make the horizontal frames. I used birch for most of the frame parts because it is cheaper, but the front pieces are cherry (or whatever the primary wood is that you are using) because they are seen. The dimensions for each frame vary slightly, but all the joinery (except on the moulded divider frame) is the same, and can all be done at the same time on the tablesaw. Cut the mortises with a stopped dado cut, as shown in figure 1. Note that the moulded divider frame has these same mortise-and-tenon joints at its rear, but that the front piece is doweled. This is because the edges of the front joints are exposed, and mor-

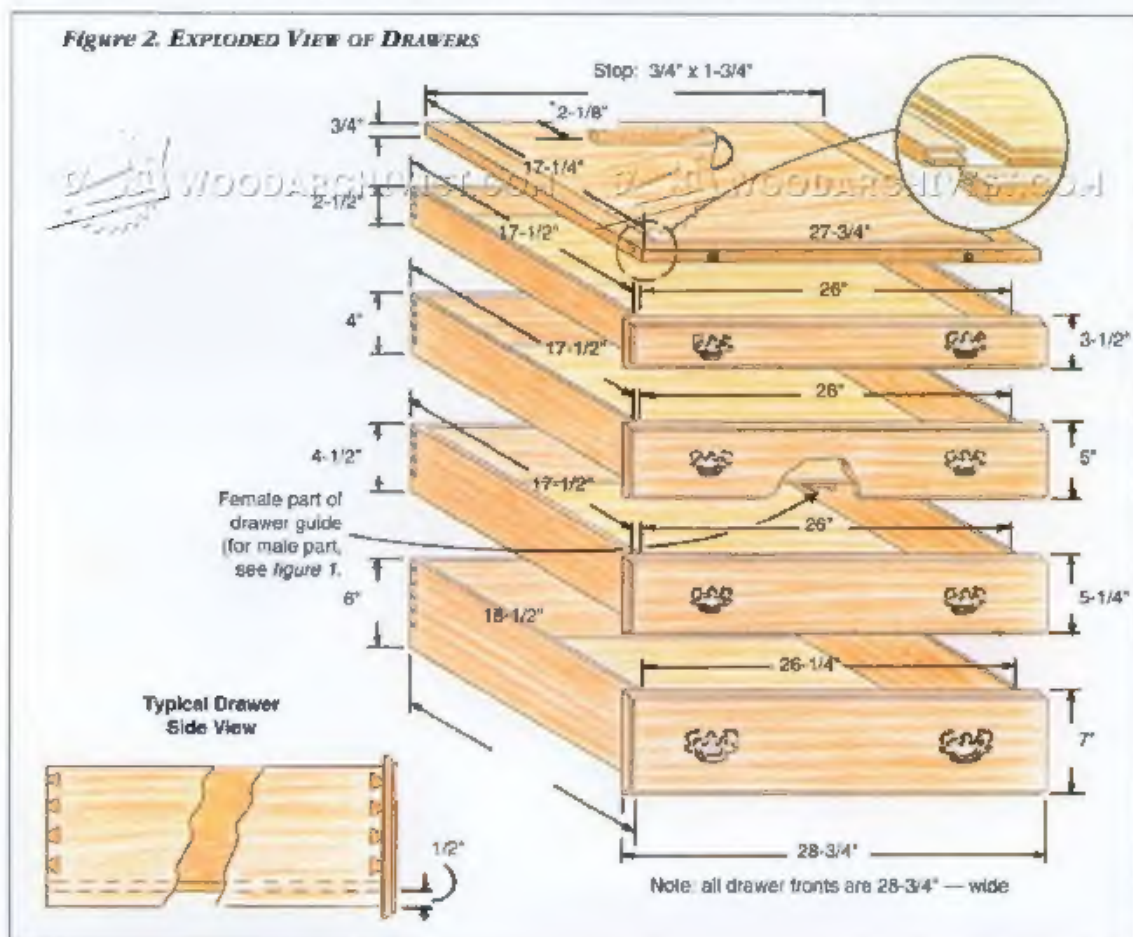
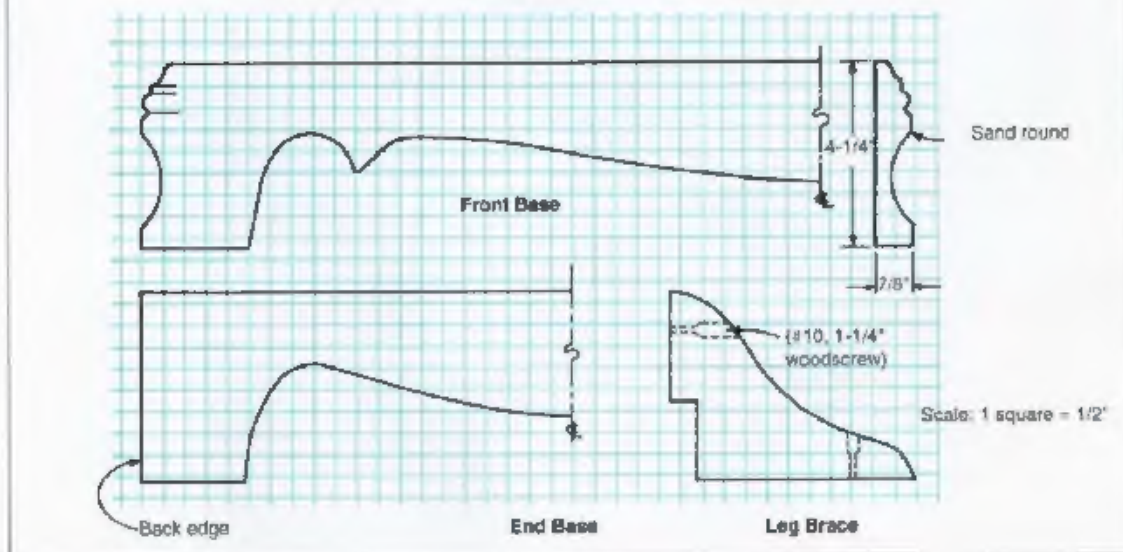


Figure 3
SCALED GRID FOR CURVED-BASE PATTERNS



luse-and-tenon joints would show, whereas dowel joints result in a less conspicuous, single straight line.

Make sure the dado equals the thickness of the 1/4-in. plywood used in the frames. Only three frames are fitted with plywood: the two middle frames in the top section of the cabinet, and the bottom frame in the bottom section. When making this dado, run it all the way through; it will serve both as the mortise for the tenons and the groove for the plywood.

After the mortises (and plywood grooves) are cut, make the matching tenons. Make sure the tenons are accurately located and fit snugly. All parts must lie in the same plane when assembled. After all the tenons are cut, bore for the dowels needed on the moulded divider frame.

Glue up all the frames (not forgetting the plywood in the those frames that require it), and when dry, sand all the joints smooth so that the drawers will slide on them unobstructedly. Now notch the front corners of the top three frames to fit around the stopped dados at the front of the sides. These notches are 3/16-in. deep, just like the dados, and can be cut on the tablesaw with a dado-set. The bottom two frames are notched to fit around the pilasters, but because those dimensions are greater than those of the other notches, it is probably best to notch these by hand.

Now glue and screw the frames and sides together, using 1-1/4-in. #10 woodscrews. The top frame of the bottom section is fixed with screws angled into the rabbet. All others are fixed with screws inserted from the outside of the sides, which should be pre-bored to receive the screws and countersunk for plugs. For each frame, use only two screws on each side, one 2-in. back from the front edge, and one at the center. Don't put a screw at the back, and also don't glue the

back half of the frame in the dado—doing so would prevent the sides from expanding in humid weather, and lead inevitably to cracking.

Construction of the base — Sock for the base is created by running it across the tablesaw blade at a 45° angle. Clamp the guide fence to the saw securely, and make a series of cuts, raising the blade in 1/8-in. increments between each cut, until the width of the cut is a full 2-in. Shape the tops of these pieces with a router, and finally sand the entire profile smooth. Use the grid drawing (Figure 3) to make a template to trace the bottom curve of the base pieces. Trace this curve onto the back, and cut it out with a bandsaw. (You could also use a scrollsaw, sabersaw, or a coping saw.)

Once it is cut, sand the edge smooth with a drum sander or by hand. A spokeshave might also be useful here. Miter the base pieces together and fit them to the rabbeted edge of the cabinet sides. Cut these miters carefully to obtain a tight fit. The base pieces are secured to the sides with glue and screws, but once again *don't* glue the rear part of the side pieces—instead, slot-screw this section using roundhead screws with washers, to allow for wood movement.

Once the base pieces are screwed in place, glue in corner blocks to add strength (as shown in figure 1). Glue and screw the blocks to the bottom frame and the base pieces, but not to the cabinet sides—once again this is in order to allow the sides to move.

Final assembly of the carcass — Using a router, shape the moulded edge of the divider frame, and then fix it to the bottom section of the carcass with screws inserted into the top frame of the bottom section. Now place the top section on

the divider frame, and in turn screw it down through the front and rear rails of its bottom frame.

Drawer construction — Dovetail joints are preferable for drawer construction, but simpler drawer-joints made on the tablesaw may be used. The dimensions given are for dovetailed drawers, and will have to be altered slightly for different joint designs, especially if false, cabinet-type fronts, screwed to the drawer fronts, are made. If you do make dovetails, be careful to locate the pins above or below the groove needed for the plywood drawer-bottoms, so that the groove will be hidden by the tails. Cut the grooves on the tablesaw using a dado-set, or by using a router fitted with a straight bit. The groove should allow the bottoms, which should ~~not~~ be glued in place, to move a little. When you assemble the drawers, check carefully for squareness and flatness along the bottoms. If the drawers are not flat they will rock on the drawer frames. You can adjust for this a little by planing the high corners. If you have made separate fronts, attach them with screws from the inside, locating the fronts carefully so that they all line up. If the lips of the fronts do not fit tightly against the case and the frames, you can use a rabbit plane to plane away the high spots.

Make and glue the female center-guides onto the drawer bottoms, fitting them into a notch cut in the drawer back, and making sure they are centered exactly. Screw the male drawer-frame guides onto the drawer frames, being equally careful to center these as well. Before you finally glue these pieces in

place, test fit the drawers to make sure everything is perfectly aligned and runs smoothly.

The desk pullout and top — The desk pullout is made to the dimensions shown. The three edge-pieces are glued onto the center board with tongue-and-groove joints. Cut, fit, and glue the joints for the two side-pieces first, then cut the joint along the front and fit its edge piece. A small strip secured to the bottom of the pullout at the back acts as a stop that hits the front rail of the top frame when the pullout is extended.

After the edge of the top of the chest is moulded, screw it down to the side pieces and plug the screws. There is no need to ~~use~~ these screws, as the top and sides will move together. Cut two pieces of plywood to fit over the backs of both sections, securing them with riddhead screws and fender washers.

Finish and hardware — For the finish I first used a cherry-colored oil-stain, and then applied three coats of polyurethane satin finish, sanding between each coat. The last coat should be rubbed out with #0000 steel wool, lightly lubricated with linseed oil.

Install the drawer pulls and pullout knobs after the finish is complete. To ensure easy-running drawers, cakewax applied to the bottoms of the drawer sides and guides is a useful trick. Lastly, I install glides under each foot on the base.

Joseph Olivari is a woodworker in Gardner, Mass.